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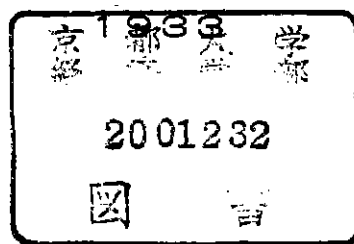
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EFFECTS OF THE OPERATION OF THE RICE LAW

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1. A GENERAL SURVEY

I have already explained the objects of the Rice Law and the revisions which have been effected in the Law¹⁾. The agricultural crisis since 1930 has brought prominently to the fore the question of controlling the prices of agricultural products—the price of rice, the most important of all agricultural products, in particular—and the need is pressing of some fundamental policy being adopted for the settlement of this problem. Since the Minister of Agriculture and Forestry promised in the extraordinary session of the Diet last summer that the Government would introduce a drastic Bill for the control of the price of rice in the next session of the Diet, the Government has called meetings of the Rice Advisory Council and the Rice Control Inquiry Commission to study various plans such as the official fixing of the price of rice, the control of the supply of rice, and a monopoly of rice. At a recent plenary meeting of the Commission, a concrete measure for the control of price of rice was adopted, and its introduction in the Diet assured.

1) cf. p. Yagi, On the Fixing of a Standard of the Price of Rice (Kyoto University Economic Review, Vol. V. No. 2) 1930.

Yagi, A Study of the Cost of Rice Production (Kyoto University Economic Review, Vol. VII, No. 1) 1932.

This rice control plan is intended to give fresh strength to the Rice Law in force, and its outstanding features are: (1) Provision is made either for the increase, reduction or remission of the import duties on foreign rice, millet and other cereals or for the restriction of the importation of millet and other cereals for a designated period, when such course is deemed necessary for the control of rice. Thus, it stipulates for the restriction of imports, from which the Rice Law in force deliberately refrains. (2) The new plan strives to rectify both a wide disparity that often occurs in the volume of the rice marketed in different seasons and the concentration of rice supplies in certain districts. That is to say, for the regulation of the quantities of Japanese, Korean and Formosan rice leaving their respective producing prefectures or countries each month, it is so provided that the Government should make a monthly calculation of such quantities and make purchases in the season of brisk movement of rice and sell its stocks where a shortage of supply arises after this season, with a view to securing a monthly balance of the quantity of rice leaving its producing districts throughout the country. This stipulation is quite novel, for it is absent from any of the rice laws hitherto operated. (3) The abovementioned two points embody the essentials of the new control plan in its relation to the regulation of rice supplies, and in reference to the regulation of price, its salient feature lies in its attempt to fix the official price of Japanese rice. The methods adopted in this regard are to fix the highest and the lowest price of rice—the lowest price in due consideration of the cost of producing rice, and the highest price by taking into account the prices of commodities and other economic factors and at a level not exceeding the bearing capacity of the consumer. The Rice Law in force simply provides that the Government can sell its stocks of rice or make fresh purchases for the regulation of the price of rice, when the actual price of rice either rises above the legally-fixed highest price or falls below the legally-fixed lowest price, and these sales or purchases are

not obligatory. Under the new control plan, however, the Government must make purchases when anybody asks it to buy his rice at the lowest price, and it must also sell its rice if anybody offers to buy it at the highest price. In this respect, the new rice control plan goes a step further than the present Rice Law in the sense of fixing the price of rice officially. (4) Provision is also made that with the enforcement of the rice control law, the limit of loans to be made by the special account for the regulation of the demand and supply of rice should be extended from the present ¥ 480,000,000 to ¥ 700,000,000.

In the event of the enforcement of the projected rice control law, it is expected that better results than hitherto will be reaped in the matter of regulating the price of rice. In the present article, however, attention will be confined to the study of the contribution which the present Rice Law, since its enactment in 1921, has actually made to the stabilisation of the price of rice, which is the true aim of the legislation.

The true aim of the Rice Law is to prevent violent fluctuations in the price of rice so as to enable the producer of rice to follow his avocation at ease, on the one hand, and to ensure the security of living for the consumer, on the other. Seeing, however, that since the promulgation of the Rice Law in April, 1921, the price of rice has, on the whole, been on the downward course, and as, moreover, the price of Japanese rice has been subject to pressure from Korean and Formosan rice, the importation of which into Japan has been on the increase of late years, the Law has chiefly been operated in the direction of forcing up the price of Japanese rice through its purchases by the Government. On a few occasions only have there been sales of Government rice for regulation purposes—and this either in the name of conversion purchases or in that of the disposal of the old rice in stock.

(a) PURCHASES OF RICE FOR REGULATION
PURPOSES

Although the Rice Law has for its object the prevention of sharp falls in the price of rice so that the rice producer may follow his avocation with an easy mind, there are on the side of rice producers landowners as well as peasant proprietors and tenant farmers who actually produce rice, and their interests in the price of rice are not always and necessarily identical. As the quantities of rice marketed by the sellers of rice in agricultural districts, namely, landowners and peasant proprietors and tenant farmers, differ according to seasons, if the Government purchases rice in a season when the actual producers of rice have no stocks of rice for sale, such purchases, if they bring up the price of rice, will not benefit such producers.

The following table shows the dates of purchases of Japanese rice by the Government, the quantity announced for purchase, and the quantity actually purchased, since the promulgation of the Rice Law :—

Table No. 1.

Dates of purchases of Japanese rice and the quantities purchased.

Purchase number	Year	Quantity announced for purchase	Quantity actually purchased	Percentage of the quantity purchased to the quantity announced	Date of announcement	Period of offers for sale	The duration accepting offers
First	1921	1,000,000 <i>roku</i>	358,179.6 <i>roku</i>	35.8%	May 25	From June 10 to June 30	21 days
Second	1923	1,000,000	221,854.8	22.1	Feb. 14	From Feb. 20 to March 20	29 days
Third	1927	1,000,000	213,965.2	21.4	Sept. 13	From Sept. 20 to Oct. 5	16 days
Fourth	1927	500,000	514,196.0	102.8	Nov. 9	From Nov. 17 to Dec. 10	24 days
Fifth	1927	1,000,000	1,021,046.4	102.1	Dec. 15	From Dec. 23 to Jan. 31	40 days

Sixth	1929	1,000,000	1,034,898.8	103.5	April 1	From April 11 to May 10	30 days
Seventh	1930	2,000,000	2,019,024.0	101.0	Dec. 3	From Dec. 16 to Dec. 20	5 days
Eighth	1931	1,000,000	{ 743,370.4 257,000.0	100.0	{ Feb. 1 Feb. 25	{ From Feb. 10 to Feb. 24 From March 5 to March 7	{ 15 days 3 days
Ninth	1931	1,000,000	1,000,000	100.0	Oct. 14	From Oct. 31 to Nov. 2	3 days

Classified according to years, these purchases were made once in 1921, 1923, 1929, and 1930, three times in 1927 and twice in 1931.

If classified according to the new rice marketing season, the between-season period, and other seasons, they show the following :—

Seasons	Purchases	Number of purchases
New rice marketing season (From November to January)	Fourth, fifth, seventh and ninth	Four times
Between-season period (From July to September)	Third.	Once
Other seasons (From February to June)	First, second, sixth and eight	Four times

If purchases are to be made with the advance of the true interests of rice producers in view, they ought to take place in the season when new rice is put on the market, but not all the purchases were made in this particular season.

I will first study the effects which each of these purchases for regulation purposes produced on the price of rice, in the light of the state of rice harvest and the economic conditions generally in the years concerned, and then will make a statistical study of the matter.

The first purchase (in June, 1921). The rice harvest for

1920 was very rich, the total yield amounting to 63,200,000 koku (9.8 per cent. over the average annual crop). Due to the financial panic of March, 1920, the market price of rice had gradually fallen from ¥ 50 odd of 1920 to ¥ 27 odd in January, 1921, and to ¥ 25 odd in March. In the middle of April, it rose to ¥ 26 odd. In the Tokyo Rice Market, rice quotations advanced from ¥ 25 odd in March to ¥ 27 odd in April at a bound. This rise was presumably partly due to the fact that the prices of commodities had gradually been taking an upward course since April, when they reached bottom, but it was probably owing in part to some psychological effects which the promulgation of the Rice Law had on those moving in the Rice Market. On May 25th, an official announcement was made of the purchase of 1,000,000 koku of rice, but it did not affect the market price of rice. As this first official purchase was made at a time when the price of rice was gradually rising, there were few offers of sale, resulting in the Government's purchase of only 358,000 koku. As the quantity purchased was so small, it was no wonder that it produced little effect on the price. From June, the market price made a further advance until it reached ¥ 31 odd in August. This steady rise was evidently due to the fact that since the planting of rice in 1921 the weather had been generally unfavourable and the pessimistic forecast of the rice crop was further accentuated in summer¹⁾. It may be that the purchase of 380,000 koku of rice did something to stimulate this rising tendency. Nor was the time for the first purchase well chosen, for it took place in June.

The second purchase (in February, 1923). The rice crop for 1922 was 60,690,000 koku, or an increase of about 5,000,000 koku as compared with the previous year. In consequence, the price of rice fell from ¥ 38 odd in August, 1922, to ¥ 30 odd in October of the same year. It further

1) The rice harvest for 1921 was 55,180,000 koku, or a decrease of 8,000,000 koku from the previous year.

declined to ¥29 in November and to ¥26 in December. In January of the following year, it recovered to ¥27, and in February to ¥28, when the Government announced its decision to purchase 1,000,000 koku. As a further advance in the price of rice was generally anticipated at the time, few responded to the Government overtures for purchase, with the result that the Government could purchase no more than 220,000 koku. Indeed, this purchase ought to have been made in December at the latest, when the new rice was put on the market. There was a steady rise in the price of rice after February until it reached ¥35 in August, but this was largely due to the poor harvest of the previous year. All that the 220,000 koku purchase did was perhaps to stimulate this tendency somewhat.

The third purchase (in September, 1927). In 1927, the price of rice rose from ¥33 odd in January to ¥37 odd in July, and then fell to ¥36 in August and to ¥35 in September. Yet the ratio of the price of rice (which means the quotient obtained by dividing the index number of the price of rice by that of the price of commodities) still stood at 1.366 in August. The Government nevertheless announced the purchase of 1,000,000 koku on September 13th. As this announcement synchronised with the between-season period, it is difficult to understand what this purchase was for. In the summarised report on the operation of the Rice Law, published by the Agricultural Affairs Bureau, we find the following statement: "As the price of rice developed a downward tendency in the latter part of July this year, the Rice Committee met on August 6th to discuss measures to be taken to meet the situation, as the result of which it was decided that, if the falling tendency was accentuated and proper regulation deemed necessary, the 1926 rice should be purchased to a quantity not exceeding 1,000,000 koku. The weak tone of the price of rice persisted in September and much anxiety was occasioned to the rice producers because it was generally felt that if nothing was done to check this tendency, it would become difficult to maintain

at the proper level the price of new rice, which would soon be harvested, so the Government decided to purchase 1,000,000 koku of the 1926 rice, in pursuance of the decision of the Rice Committee." The Government's purchase of rice cannot, however, be justified on such grounds only, and, quite naturally, this purchase called forth public condemnation on suspicion that it was designed for the furtherance of party interests. Although the Government announced for the purchase of 1,000,000 koku, the quantity actually purchased was only 210,000 koku.

The fourth purchase (in November, 1927). The rice yield for 1927 amounted to 62,100,000 koku, or about 6,000,000 koku more than the previous year. As the price of rice, which ruled at ¥ 35 odd in September, fell to ¥ 31 odd in November, the purchase of 500,000 koku was announced on November 9th. The time of purchase coincided with the new rice marketing season and was consequently opportune. For the first time since the Rice Law was enacted could the Government buy rice to the quantity officially announced for purchase. Seeing, however, that the ratio of the price of rice still stood at 1.229 at the time (November), it is doubtful whether this purchase was really called for. In spite of this purchase, the price of rice dropped from ¥ 31 or ¥ 32 in the early part of November to ¥ 30 in the latter part of the same month.

The fifth purchase (in December, 1927). Because the price of rice was still below the ¥ 32 mark in December, despite the 500,000 koku purchase in the previous month, another purchase of 1,000,000 koku was announced on December 15th, and the desired quantity was purchased in the latter part of December and January of the following year. As this purchase was followed by a rise in price to ¥ 32 odd in the latter part of January from ¥ 31 odd in the early part of the month, it seems fair to conclude that it brought some results.

The sixth purchase (in April, 1929). The year 1928 yielded a normal rice crop of 60,300,000 koku, but the

general economic depression forced down the price of rice, which declined from ¥ 33 odd in September, 1928, to ¥ 28 odd in January, 1929. As this price level was kept up for some time afterwards, the Government announced the purchase of 1,000,000 koku on April 1st. Seeing, however, that the ratio of the price of rice, which dropped to 1.058 in December of the previous year and to 1.049 in January, had subsequently been going up, this purchase was not altogether opportune. In the months from April to June inclusive, subsequent to this purchase, the price of rice ruled at ¥ 29 odd, and so the effects of the purchase could not be doubted, but the interests of the actual rice producers were not evidently fully considered in this purchase.

The seventh purchase (in December, 1930). The rice harvest of 1930 was unprecedentedly bumper, the total yield amounting to 66,800,000 koku. This, coupled with the general economic depression, brought the price down disastrously, that is, from ¥ 30 odd in August, 1930, to ¥ 18 odd in November. In order to check this falling tendency, the Government announced its intention to purchase 2,000,000 koku on December 3rd. Although rice was purchased to the quantity announced its price dropped to ¥ 17 odd in January and February of the following year, so that no positive results ensued from this purchase.

The eighth purchase (in February, 1931). Another purchase of 1,000,000 koku was made in February, 1931, which brought some results, for the price recovered to ¥ 18 odd in March.

The ninth purchase (in October, 1931). Because the price of rice which rose to ¥ 20 odd in August slumped to ¥ 17 odd in October, in spite of the poor harvest of the year, another 1,000,000 koku purchase was effected in October, but no material effect was produced.

To give a general view of the rice purchases made by the Government on nine different occasions since the enactment of the Rice Law, the fact cannot be denied that the time was often ill chosen and there was undue delay in the

application of the Law. It must, however, be recognised at the same time that there was a gradual improvement in the choice of the time for purchase and that the Law, if properly operated, can do something in the way of forcing up the price of rice.

With regard to delivery places, they were increased from four in the first purchase to twenty in the sixth purchase, thereby gradually increasing the chances of small farmers to participate in offers for sale. The reduction of the minimum quantity, offerable for sale, of one and the same description of rice from 50 koku in the first purchase to 20 koku was also commendable from the point of view of promoting the interests of small farmers. Again, as to the precedence of purchases, priority was given to offers for sale by local public bodies, co-operative sale associations, federations of co-operative sale associations, and agricultural warehouses and federations of agricultural warehouses, and offers by proxy by prefectural, district or municipal agricultural societies and sales offices of the Imperial Agricultural Society, in preference to all other offers, and, moreover, these sellers were exempted from the obligation of putting up security money. In this way, preference was given to transactions with actual producers and organisations of such producers, instead of to purchases from the rice market, with a view to protecting the interests of producers as far as possible.

(b) SALES OF RICE FOR REGULATION PURPOSES

Sales of rice under the Rice Law took place on several occasions, but as they were invariably for the purpose of disposing of old rice stocks, the quantity involved was small in each case. There has been no sale of rice for the regulation of the price. On three occasions in 1930, altogether 1,000,000 koku of old rice was disposed of. The first sale took place in the latter part of June, when 438,000 koku was sold, and the second sale in the latter part of August,

the quantity sold being 338,000 koku. In each case, the quantity which the Government desired to dispose of was 500,000 koku. As the quantity actually sold fell short of the desired quantity, a third sale of 185,000 koku of old Japanese rice was effected in the latter part of September. Because these sales took place in the between-season period, they did not affected the market price of rice.

(c) EXCHANGES OF RICE FOR STORAGE

The exchange of rice, as mentioned in the Rice Law, means the disposal of such old rice in the Government stocks as does not allow of longer storage and the purchase of new rice of the same quantity to make good the depleted stocks. It is intended for the keeping of Government rice in perfect state, not designed for the regulation of the market price of rice. This is why the Rice Law of 1921 excused the Government from the duty of officially announcing the price, when making such purchases, and why, in the revised Law enacted in March, 1931, also, it is stipulated that exchanges of rice can be effected even when the market price of rice does not rise or fall beyond the highest or lowest price officially fixed by the Government. Such being the case, exchanges of rice ought to take place at a time when they are expected to affect the price of rice least. Seeing, however, that, in exchanges of rice, the rice to be sold is old and of degraded quantity, while that to be bought is new rice, the rice market will be affected more by the purchase of new rice than by the disposal of old rice, provided the sale price of old rice is fixed properly. This is especially so when such action is taken in the between-season period. It is, therefore, proper that the purchase of rice by way of conversion purchases should be made in the season when the marketing of new rice is most brisk. On the contrary, the disposal of old rice ought to take place in the between-season period, as, if it is effected in the brisk new rice marketing season, the marketing

operations will be further stimulated. By this means, the effects of the sales of old rice on the market price can be minimised, on the one hand, and old rice can be sold at comparatively high prices and new rice purchased at comparatively low prices, on the other, so that losses to the national treasury can be made small.

The following table shows the principal exchanges of Japanese rice hitherto carried out :—

Table No. 2.
Exchanges of rice for storage.

Number of exchanges of rice	Sold		— Bought	
	Date	Quantity	Date	Quantity
First	Dec. 10, 1921	<i>koku</i> 60,241	Dec. 13, 1921	<i>koku</i> 75,000
Second	(A) Sept. 4, 1922	56,735	From Jan. 15, 1922 to Jan. 29, 1922	365,226
	(B) From Feb. 1923 to June 1923	246,435		
Third	From Sept. 1924 to Nov. 1924	251,000	From Feb. 12, 1925 to Feb. 14, 1925	251,740
Fourth	From July 10, 1925 to Oct. 27, 1925	277,855	From Jan. 7, 1926 to Jan. 9, 1926	407,361
Fifth	(A) Feb. 15, 1927	5,576	From Jan. 13, 1927 to Jan. 15, 1927	177,721
	(B) March 18, 1927	4,283		
Sixth	From Dec. 21, 1928 to Jan. 20, 1929	476,947	From Dec. 21, 1928 to Jan. 20, 1929	476,947
Seventh	(A) Oct. 18, 1929	149,155	Jan. 14, 1930	432,969
	(B) Jan. 11, 1930	388,934		
Eighth	(A) From April 1, 1932 to April 13, 1932	500,000	From April 14, 1932 to April 25, 1932	500,000
	(B) May, 14, 1932	500,000	May 17, 1932	500,000
	(C) June 15, 1932	500,000	June 21, 1932	500,000

From the above table it will be seen that the first, sixth and seventh sales took place in the new rice marketing season ; the second, third and fourth sales in the between-season period ; the fifth sale in spring ; and the sixth sale

in early summer or before the between-season period. On the other hand, the purchases were mostly made in the season when the marketing of new rice was brisk. The only exceptions were the third purchase, which took place in the middle of February, and the eighth purchase which was made in April and later.

Indications are not altogether lacking that some of these sales and purchases in the nature of exchanges of rice were carried out with the regulation of the price of rice somewhat in view. The third and the fourth sales are cases in point. It seems that these sales were in some measure prompted by a desire to depress more or less the price of rice which kept high at ¥ 40 odd from August, 1924, to the autumn of the following year. With regard to the purchases also, there are indications that the fourth and the fifth purchases had for their collateral object the raising of the price of rice. The eighth purchase, which was effected at three stages, was apparently not altogether free from such motives. But since the sales and purchases by way of conversion purchases are not essentially for the purpose of regulating the price of rice, it is only proper that special care should be used to see that they do not affect the price of rice.

2. A STATISTICAL STUDY

As already explained, the Rice Law aims at the prevention of violent fluctuations in the price of rice so that the range of fluctuations may be limited as far as possible. It is, therefore, necessary to examine how far the stabilisation of the price of rice has been achieved by the operation of the Rice Law. There are very many factors which combine to determine the price of rice, and it is absolutely impossible to ascertain the exact extent to which each of these numerous factors operates to influence the price of rice. So, I must content myself with finding the general trend by the methods described below.

First, the standard deviation and coefficient of variability of the monthly quotations in the Fukagawa rice market (Tokyo) are worked out in order to see how far the range of fluctuations in the price of rice was contracted by the operation of the Rice Law. The periods chosen for this study are the 120 months from January, 1921,—the year in which the Rice Law came into force—to December, 1930¹⁾; the 120 months from January, 1901, to December, 1910; the 120 months from January, 1911, to December, 1920; and the 120 months from January, 1909, to December, 1917. The years 1918, 1919 and 1920, when abnormal conditions prevailed, have been excepted. The rice quotations cited here represent the actual market prices; they do not embody prices from which the effects of the prices of commodities have been eliminated.

Table No. 3.

Comparison of the state of fluctuations in the price of rice.

Periods		Average price of rice	Standard deviation	Coefficient of variability
First period	From Jan., 1901 to Dec., 1910	Yen 13.00	Yen 1.69	12.16%
Second period	(A) From Jan., 1911 to Dec., 1920	24.58	12.35	50.24
	(B) From Jan., 1908 to Dec., 1917	16.48	3.09	18.75
Third period	From Jan., 1921 to Dec., 1930	33.78	5.46	16.16

Note. The figures appearing at p. 48 in the *Beikoku Yoran* (Rice Manual) for 1932, published by the Agricultural Affairs Bureau were taken as the basis of calculation.

The above table shows that the range of fluctuations in the price of rice was smallest in the first period, and next comes in order the period in which the Rice Law was in operation. It is, however, difficult to judge the effects of

1) As the market was closed in September, 1923, owing to the Great Earthquake, the number of months under review is, in, fact, 119.

the operation of the Rice Law by this limited material, for the figures are not duly stripped of the influences exerted by other factors on fluctuations in the price of rice. In order to secure more reliable figures for each period for comparison, I will, therefore, proceed to delete the influences exerted on the price of rice by the fluctuations in the prices of commodities generally and by the state of the rice harvest. There are, of course, many factors, besides these, operating to affect the price of rice, but it is very difficult, or rather practically impossible, to make an accurate estimate of the influences of these factors.

To begin with, to exclude influences from fluctuations in the prices of commodities, the annual actual rice price has been divided by the Bank of Japan's chain index number of the prices of commodities, as reduced to geometrical mean based on the previous year's standard.

Next, the following methods have been applied to exclude the influences exerted by the state of the rice harvest from the deflated price of rice. By the study of the correlation between the total rice yield and the price of rice, the writer of the present article has found that the rice price for the current rice year (from October 1st of the previous year to September 30th of the current year) is influenced by the state of rice harvest for the current and the previous rice years, and has obtained the following formulae in regard to the multiple correlation then inquired into.

$$\begin{aligned} a &= 0.7842 & b_{12,3} &= -1.40008 & b_{13,2} &= -0.86067 \\ X_1 &= 0.7842 - 1.40008 X_2 - 0.86067 X_3 \dots \dots (1) \\ S_{1,23} &= 10.384 & R_{1,23} &= 0.6738 \end{aligned}$$

In the above formula (1), each coefficient of X_2 and X_3 , merely indicates the weight which it shares when acting conjointly on the price of rice. If we now take the coefficient of X_2 as the standard and reduce the coefficient of X_3 proportionally, we shall get the ratio of 100 and 61 respectively. If we are to adjust the variables of X_2 and X_3 by this ratio to convert them into simple constants and find a

simple relation with the price of rice, the result will not greatly differ from that of the formula (1) of multiple correlation referred to. From this point of view, the total rice yields for two successive years have been weighted and averaged yearly by the above-mentioned ratio with the results shown in the following table:—

Table No. 4.

The index number of weighed biennial mean of rice production.

Rice Year	Total yield of Japanese rice (in 1,000,000 koku)	Total rice yields for two successive years which have been weighted	The index number of weighted biennial mean of rice production
1899	39.69		
1900	41.46	40.79	100.0
1901	46.91	44.84	109.9
1902	36.93	40.71	99.8
1903	46.47	42.85	105.0
1904	51.43	49.55	121.5
1905	38.17	43.19	105.9
1906	46.30	43.22	106.0
1907	49.05	48.01	117.7
1908	51.93	50.84	125.6
1909	52.43	52.24	128.1
1910	46.63	48.82	119.7
1911	51.71	49.78	122.0
1912	50.22	50.78	124.5
1913	50.25	50.24	123.2
1914	57.00	54.44	133.5
1915	55.92	56.33	138.1
1916	58.45	57.49	140.9
1917	54.56	56.03	137.4
1918	54.70	54.65	134.0
1919	60.81	58.49	143.4
1920	63.20	62.29	152.7
1921	55.18	58.22	142.7
1922	60.69	58.60	143.7
1923	55.44	57.43	140.8
1924	57.17	56.51	138.5
1925	59.70	58.74	144.0
1926	55.59	57.15	140.1
1927	62.10	59.63	146.2
1928	60.30	60.98	149.5
1929	59.55	59.83	146.7

By dividing the deflated price of rice by the results shown in Table No. 4, we can find the rice price from which the influences from the state of harvest have been excluded.

Table No. 5.

Deflated rice price strip of the influences from the state of harvest.

Rice year	Deflated rice price October—September	Index number of biennial mean rice production	Deflated rice price strip of influences from harvest state
	<i>Yen</i>		<i>Yen</i>
1901	12.36	100.0	12.36
1902	13.00	109.9	11.83
1903	14.75	99.8	14.78
1904	12.69	105.0	12.08
1905	11.29	121.5	9.29
1906	12.44	105.9	11.75
1907	13.13	106.0	12.39
1908	13.19	117.7	11.21
1909	12.17	125.6	9.69
1910	10.67	128.1	8.33
1911	14.09	119.7	11.77
1912	15.93	122.0	13.06
1913	16.92	124.5	13.59
1914	14.53	123.2	11.79
1915	11.06	133.5	8.28
1916	9.51	138.1	6.89
1917	10.19	140.9	7.23
1918	12.45	137.4	9.06
1919	15.74	134.0	11.75
1920	14.31	143.4	9.98
1921	11.45	152.7	7.50
1922	14.74	142.7	10.33
1923	12.83	143.7	8.93
1924	14.40	140.8	10.23
1925	16.15	138.5	11.66
1926	16.70	144.0	11.60
1927	17.10	140.1	12.20
1928	15.14	146.2	10.35
1929	13.84	149.5	9.26
1930	15.95	146.7	10.87

Now, let us find the standard deviations and coefficients of variability of the prices of rice in Table No. 5, which embody rice prices exclusive of the influences both from fluctuations in the prices of commodities and from the state of harvest.

Table No. 6.

Comparison of the state of fluctuations in the price of rice, stripped of the influences from both fluctuations in the prices of commodities and from the state of harvest. (From October of the preceding year to September of the current year forms one rice year.)

Periods		Average rice price	Standard deviation	Coefficient of variability
		<i>Yen</i>	<i>Yen</i>	
First period	1901—1910	11.37	1.76	15.48%
Second period	(A) 1911—1920	10.34	2.27	21.95
	(B) 1908—1917	10.18	2.30	22.59
Third period	1921—1930	10.29	1.35	13.12

The annual range of fluctuations in the price of rice, found in this way, is smallest in the period in which the Rice Law was in operation. It is, however, wrong to attribute this contraction of the range of fluctuation solely to the effects of the operation of the Rice Law, for it is necessary to take into due consideration the effects of the importation of Formosan rice in recent years in checking the rising tendency of the price of Japanese rice and also the ups and downs in the state of business and the rise and fall in the purchasing power of the consumers generally, which are indeterminable quantitatively. The fact cannot nevertheless be impugned that the operation of the Rice Law has made some contribution to the reduction of the range of fluctuations. As things stand to-day, nobody will be able to indicate quantitatively the exact extent of the effects which the operation of the Rice Law has produced on the price of rice, separately from the effects of many other factors.

So far, I have examined the effects which the operation

of the Rice Law has produced on the annual fluctuations in the price of rice.

The price of rice is subject to seasonal fluctuations too. There is a tendency for it to decline in the season of the brisk movement of new rice and to rise as the between-season period draws nearer. Then, how far has the Rice Law affected these seasonal fluctuations? In order to study this point, I have sought the index number of seasonal fluctuations, by means of W. M. Persons's link relatives method, in regard to the actual quotations in the Fukagawa rice market, for the period covering January, 1921, to December, 1930 (latter period); for the period from January, 1911, to December, 1920 (former period "A"); and for the period from January, 1908, to December 1917 (former period "B"). Each period consisting of ten years, the average of the middle two terms is taken as median. In regard to the latter period, however, as there were no rice quotations for September, 1923, owing to the Great Earthquake, the middle of the 9 terms was taken as median for the month.

Table No. 7.

Comparison of the index number of seasonal fluctuations in the price of rice.

Months	Latter period (Jan., 1921— Dec., 1930)	Former period "A" (Jan., 1911— Dec., 1920)	Former period "B" (Jan., 1908— Dec., 1917)
January	95.7	98.8	97.0
February	96.5	97.3	96.6
March	97.4	97.4	97.9
April	99.6	97.6	99.1
May	100.1	97.8	100.2
June	101.2	99.7	102.1
July	103.3	103.0	102.8
August	105.4	106.1	106.6
September	104.2	103.1	103.5
October	102.6	101.3	100.1
November	98.9	99.0	97.3
December	95.3	98.9	96.8
Average	100.0	100.0	100.0

In each case, the index number is low in the new rice marketing season and rises as the between-season period draws nearer. In the latter period, when the Rice Law was in force, this tendency was more marked, as compared with the former period. In all of the three period, it is highest in August, and of the index numbers of August, that for the latter period is the lowest. This is presumably due to the fact that in recent years Formosan rice—first crop of the year in the island—has been imported into Japan in the between-season period.

Thus, the Rice Law has done nothing to minimise the seasonal fluctuations in the price of rice. It must, therefore, be said that small farmers who are obliged to sell their rice soon after it is harvested are put at a disadvantage.

Why, then, has the Rice Law proved ineffectual in modifying the seasonal fluctuations in the price of rice? The chief cause must be sought in the uncontrolled importation of Korean rice in recent years in the new rice marketing season. The index number of seasonal fluctuations in the supplies of Japanese rice from its principal producing centres in the period between October, 1920, and September, 1930, is shown in the following table:—

Table No. 8.

Index number of seasonal fluctuations in rice supplies.

Months	Imported from Korea	Imported from Formosa	Imported from abroad ¹⁾	Japanese rice leaving its producing prefectures	Niigata	Toyama	Akita	Yamagata	Shiga	Kumamoto
October	57.4	84.8	85.1	112.5	162.3	159.7	77.9	79.9	95.9	51.9
November	137.9	83.5	70.0	131.6	197.8	175.4	99.8	98.3	108.9	65.2
December	210.2	243.7	70.8	159.6	168.4	148.1	119.9	99.7	171.0	154.5
January	146.3	122.2	79.7	125.0	91.1	63.4	119.7	93.1	120.1	147.1

1) The index number of the seasonal fluctuations in the quantities of foreign rice imported refers to the period from January, 1901, to December, 1928.

February	116.6	77.4	85.5	84.7	65.5	48.4	112.8	76.0	111.3	96.1
March	120.0	60.8	138.1	91.8	77.6	68.4	111.7	90.4	96.8	112.3
April	110.7	33.7	150.5	89.1	78.1	83.2	108.7	82.3	88.4	103.0
May	86.5	20.9	124.6	88.9	77.5	84.7	114.4	101.3	89.7	105.8
June	77.8	38.4	108.5	82.3	86.2	90.3	102.7	115.3	84.9	98.7
July	51.6	175.0	110.9	75.5	72.8	86.6	73.2	138.1	77.4	106.3
August	42.5	153.2	88.6	72.6	59.6	66.9	77.6	135.1	79.1	87.8
September	42.4	106.4	87.7	86.4	63.0	124.6	81.6	90.5	76.5	71.3
Average	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The importation of Korea rice in large quantities in the new rice marketing season naturally operates to lower the price of Japanese rice. If the Rice Law is to operate successfully, it is urgent that proper control should be exercised over the importation of rice.

3. THE CONCLUSION

I think I have made clear in the foregoing chapters the part which the Rice Law has played in stabilising the price of rice. When we see, however, that the loss of about ¥ 200,000,000 has been caused to the national treasury through the operation of the Rice Law since its enactment, the rice price regulation measure, for which the Law provides, has, no doubt, been quite costly. At the time the Rice Law was promulgated, it was thought that its operation would not involve the State in any loss, because, it was contended, under this legislation rice was to be purchased when its price was low and to be sold when its price was high. As a matter of fact, however, the rice purchased when it was low in price must be sold as old rice in the following year at a price a few yen lower per koku. Moreover, its storage entails pretty heavy expenses in the way of interest rates and storage charges.

Annual storage expenses (calculated on the basis of ¥ 30 per koku).

	Interest rates (annual)	Interest rates on building costs (annual)	Warehouse repairs costs	Fumigation costs (twice)	Total
Japanese rice (per koku)	Yen 1.650	Yen 1.179	Yen 0.214	Yen 0.100	Yen 3.143

Such being the case, a loss is inevitable unless the rice purchased can be sold in the same rice year and at higher prices, or the price of rice witnesses a big rise in the following year. Furthermore, as the price of rice, though there have been occasional ups and downs in the interval, has been on the downward course generally since the promulgation of the Rice Law, purchase had to be made frequently, while sales were necessitated on rare occasions, a fact which furnished another contributory cause for the heavy loss. If the new Rice Bill, which is now before the Diet, is passed, a more efficient control can probably be exercised on rice supplies, as under the Bill the funds available for the operation of the Rice Law are to be increased to ¥ 700,000,000. But at the same time the financial loss arising out of its operation will increase.

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